

Running head: Analysis of discursive fragments

**Analysis of Discursive Fragments,  
Or: Answers to the Old “What’s In a Word?” Question**

By

Scott W. Campbell  
Hawaii Pacific University  
College of Communication  
1132 Bishop Street, Suite 504  
Honolulu, HI 96813  
Email: [scamp10343@aol.com](mailto:scamp10343@aol.com)

And

Ulla Bunz  
Rutgers University  
Department of Communication  
4 Huntington Street  
New Brunswick, NJ 08901  
Email: [bunz@scils.rutgers.edu](mailto:bunz@scils.rutgers.edu)

For questions or suggestions, please contact Ulla Bunz at [bunz@scils.rutgers.edu](mailto:bunz@scils.rutgers.edu).  
The paper is also available at <http://www.scils.rutgers.edu/~bunz/publications.htm>

Presented at the 88th Annual Convention of the National Communication Association,  
New Orleans, LA, November 20-24, 2002.

Analysis of Discursive Fragments,  
Or: Answers to the Old “What’s In a Word?” Question

Abstract

Computer-mediated communication has permeated our lives at work, play, and everywhere in between. Yet, there is much we have yet to learn about the way meaning is constructed in computer-mediated settings. The purpose of this investigation was to assess whether certain discourse fragments in email messages consistently conveyed certain tones when situated in certain contexts. One hundred fifty-five subjects were asked to match message fragments to provided adjectives (affirming, appreciative, assertive, bold, caring, enthusiastic, formal, friendly, happy, personal, polite, respectful, strong, warm) and rate each according to intensity level on a 5-point Likert scale. The message fragments were situated in three contexts – business, friendship, and family interactions. Results showed that certain message fragments were perceived to be significantly formal, friendly, personal, caring, happy, and polite in the context of their use. Results also showed that, in some cases, demographic factors played a role in perceptions of discursive fragments. While additional research should be done to test other message fragments, contexts, and media, these findings broaden our understanding of how mood and impression management can be negotiated through the use of words in email messages.

To many people in western, developed countries, email has become so commonplace that they take it for granted. Other technologies have long surpassed email in “newness,” such as instant messaging, or, most recently, short messaging service via mobile phones. However, there are still unanswered questions about email. Why are we using this technology the way we do? To what extent do offline interaction norms apply seamlessly to online interactions? What influence do relationship status and context of email interaction have on the way a message is written and perceived?

In the basic communication model, a sender encodes a message, and a receiver decodes the message after receiving it. These processes mostly go unnoticed and are unconscious. Our line of research devotes itself to exactly this encoding/decoding process. Previous research has shown that email users pick up on politeness cues in email messages, even when not told to look for them. Moreover, email users accommodate this politeness by including similar politeness cues in their responses (Bunz & Campbell, 2002). The study presented in this paper took a closer look at the decoding process in mediated communication. Do people agree that certain message fragments have certain tones and thus, express certain attitudes or emotions? What does a word mean when used in email, and, do others agree on this interpretation? This line of questioning did not spring out of the blue. The following sections present previous research in related areas, and underlying computer-mediated communication (CMC) theories.

## Literature

### *Genre*

Before characterizing the tone of discourse segments within email messages, it is helpful to first frame the discussion by drawing connections to related theory and research. Fortunately such theory and research exists in the area of communication genres. In order to better study the social processes surrounding communication in organizational settings, Yates and Orlikowski (1992) adapted the concept of *genre* from rhetorical theory and applied it to organizational communication. The traditional rhetorical notion of genre refers to widely recognized types of discourse, such as the novel or the sermon, and conceptualizes them as “typified rhetorical action in the context of socially defined recurrent situations” (Yates & Orlikowski, 1992, p. 301). Rhetorical genres have been useful in studying types of discourse characterized by elements such as form, subject, audience, and situation (Campbell & Jamieson, 1978; Miller, 1984). Genres of organizational communication are characterized by substance (motives, themes, content, etc.), form (physical and linguistic aspects), and the social context surrounding the use of a particular genre. For example, the face-to-face business meeting may be viewed as an organizational genre characterized by purpose, agenda, meeting topics, meeting location, meeting time, discussion flow, and participant roles.

Computer-mediated communication has attracted much attention within the study of genres of organizational communication. For example, Yoshioka et al. (2001) assert that genre taxonomy “can help people adapt or innovate their communication within new electronic media” (p. 433). Through an historical overview of business communications, Yates and Orlikowski (1992) trace the ancestral lineage of certain types of email

messages in organizations back to the business letter of the late 19<sup>th</sup> century, which they classify as a genre. Specifically, Yates and Orlikowski point to the way distinctive polite language (e.g., “In response to your esteemed favor” and “Your humble servant”) as well as structural elements (e.g., the placement of date, complimentary close, and signature) are direct influences the business letter of the late 19<sup>th</sup> century has had on the internal memo of the 20<sup>th</sup> century as well as certain types of email messages in contemporary organizational communication.

While the scope of the present study is not limited to email messages in organizational settings, some of the discourse segments analyzed in the study can be linked to the genres of electronic communication discussed by Yates and her colleagues. For example, the present study assesses perceptions of the introductory address “Dear *[recipient last name]*” and the complimentary close “Sincerely.” These message fragments, often included in email messages, can clearly be traced to the structural elements of a traditional letter, as discussed by Yates and Orlikowski (1992). While the present study seeks to assess perceptions of these and other message segments in email messages, it is important to point out that the context of their use plays an important role in how they are perceived. Yoshioka et al. (2001) highlight the importance of context when they explain that genres should be analyzed in terms of a number of dimensions, including the purpose, content, timing, location, participants, structure, and medium of a message. The present study aims to assess perceptions of message segments in three contexts (job application, friend/student interaction, and family communication) and should be regarded as a first step in exploratory research, requiring follow up studies to

test whether the perceptions of message segments in this study hold up when situated in other contexts of use.

### *CMC Discourse Analysis*

Jacobs (1994) explains discourse analysis as a framework for examining messages in order to address three types of problems: problem of meaning (how people understand messages), problem of action (how people determine the appropriate choice of words), and problem of coherence (how people make communication patterns sensible). The purpose of the current study is to set the stage for future discourse analysis of email messages situated in context. By measuring levels of formality, friendliness, personalness, happiness, caring, and politeness of select message segments in selected contexts, this study offers a preliminary system for categorizing portions of discourse in email messages. Such a system could be useful for future research, such as investigations of communication accommodation to verbal and structural markers in email exchanges.

Previous research demonstrates the utility of discourse analysis in studies of CMC. In an investigation of gender-based participation in computer-mediated discussion groups, Herring (1992) analyzed the discourse in a computer bulletin board to explore the reasons for less participation from female subscribers than male subscribers. In her discourse analysis of the discussion group, Herring examined the messages produced by the participants for linguistic and rhetorical features and discovered two distinct discursive styles, which she describes as adversarial and attenuated/personal. The adversarial discursive style embodies strong assertions and imperatives, displaying “an overall tendency to promote oneself while battling one’s conversational ‘adversary’”

(Herring, 1992, p. 7.). The attenuated/personal style “combines features of attenuation – hedges, qualification, apologies – with an emphasis on personal aspects of the communication, both in terms of the speaker ... and addressee” (p. 7). Herring also identifies a neutral discursive style characterized by a lack of either of the other two styles. Using discourse analysis and ethnographic observation of selected discussions from nine other computer-mediated discussion lists, Herring (1996) found similar results. In her subsequent investigations, men tended to exhibit an adversarial style of communication, while women were more inclined to evoke an ethic of politeness and consideration in their postings.

Herring’s investigations show that discourse analysis is a useful approach for studying message construction in computer-mediated exchanges. The present study seeks to lay the groundwork for additional analysis of discourse in CMC by categorizing message segments according to their perceived style in select contexts. The objective of this line of research is to better address what Jacobs (1994) describes as the problem of meaning. That is, this study seeks to uncover the meaning that certain email message segments generate in particular contexts of their use.

### *Theoretical Perspectives on CMC Behavior*

This section summarizes key theories that have been advanced to explain interactions in a computer-mediated setting. The following discussion shows the evolution in this line of theory building, from a focus on the effects a text-only environment has on communication to the roles of social context and social influence in the way people perceive and use CMC.

Social presence theory was advanced by Short, Williams, and Christy (1976) to explain how perceptions of salience and involvement of others during interpersonal communication develop in a distance-based mediated setting. The premise of social presence theory is, “The fewer channels or codes available within a medium, the less attention that is paid by the user to the presence of other social participants. As social presence declines, messages are more impersonal” (Walther, 1992, p. 54). Though measured as perceptions, Short et al. (1976) considered level of social presence to be an inherent quality of media, and they realized the limitations of electronic media in providing multiple codes and channels, such as facial expressions, direction of looking, posture, dress, nonverbal, and vocal cues. The notion that a limited number of codes and channels has a significant impact on communication has led to the use of social presence theory as a framework for explaining less personal, more task-oriented communication in CMC (Culnan & Markus, 1987; Hiltz, Johnson, & Turoff, 1986; Rice, 1984; Steinfeld, 1986).

In their hypothesis of lack of social context cues, Sproull and Kiesler (1986) assert that senders and receivers of information are situated in a social context, and this context influences both who communicates with whom and the content that is communicated. Social context consists of geographic, organizational, and situational variables and is perceived by individuals through static and dynamic cues. Static cues emerge from people’s appearance and artifacts, while dynamic cues emanate from nonverbal behavior such as nodding and frowning. Sproull and Kiesler (1986) contend that the lack of social context cues in electronic mail have significant effects on the communication process and the messages transmitted. The effects of a lack of social

context cues in CMC include an increase in excited and uninhibited communication, greater self-absorption versus other-orientation, and equalized participation in communication through a reduction in the perceived status differences between actors (Sproull & Kiesler, 1986).

Another theory popularly used to account for the interpersonal effects of CMC is media richness theory. Media “richness” is assessed by the availability of instant feedback, the utilization of multiple cues to convey interpretations and feelings, and the use of natural language rather than numbers to convey subtleties (Trevino, Lengel, & Daft, 1987). Trevino et al. found that managers in organizations tend to select FtF communication for content and symbolic reasons, while email is typically used because of situational constraints. This preference to use FtF over CMC in more sensitive situations reflects how CMC is considered to be less rich than FtF communication. Face-to-face interaction “is touted as ‘richest’ given the availability of immediate feedback, the number of cues and channels utilized, nonverbal (facial and oral) backchanneling cues, and personalization and language variety” (Walther, 1992, p. 57).

Together, the theories of social presence, lack of social context cues, and media richness are regarded as the cues-filtered-out perspective (Culnan & Markus, 1987) because they attribute less personal, uninhibited, self-absorbed, and equalized participation in a computer-mediated setting to a lack of nonverbal information. Lea and Spears (1991) challenge this perspective with research demonstrating group membership and group norms can prevail over media characteristics in computer-mediated interactions. The following discussion further shows that the cues-filtered-out perspective is problematic because it overlooks some very important aspects of CMC, those being

social context, social influence, and behaviors that are used to overcome a lack of nonverbal cues. However, the cues-filtered-out perspective does highlight the importance of language in computer-mediated interactions, since language is the primary vehicle through which meaning is constructed in this environment. Adkins and Brashers (1995) discuss the importance of language in CMC as they explain,

Using language to develop and present an image is cumbersome because the level of expression always must be equal to intention; that is, messages are inherently ambiguous (Eisenberg, 1984; Weick, 1979) so the precise use of language is essential to impression management in a computer-mediated context (p. 293).

Following this line of thinking, the current study seeks to explore the meanings engendered by certain types of language used in select contexts of CMC interactions.

Social presence theory, lack of social context cues hypothesis, and media richness theory complement one another in the way they rely on a lack of channels, codes, and cues to explain the interpersonal effects of CMC. It is important to note, however, that studies have yielded inconsistent results, demonstrating that CMC message exchanges are not always less personal than FtF interaction (Rice & Love, 1987; Steinfeld, 1986; Foulger, 1990; Hiemstra, 1982; Johansen, DeGrasse, & Wilson, 1978), creating a need for further investigation and theory building.

In identifying the need for investigation and theory building, Walther (1992) offered social information processing theory as a competing explanation of the influence of CMC on interpersonal communication. In addition to explaining the disparities among previous research findings, social information processing theory explains the effects of time on interpersonal relationships among CMC users.

Social information processing theory posits that “communicators using any medium experience the similar needs for uncertainty reduction and affinity, and to meet these needs CMC users will adapt their linguistic and textual behaviors to the solicitation and presentation of socially revealing, relational behavior. The critical difference between FtF and CMC from this perspective is a question of rate, not capability” (Walther, Anderson, & Park, 1994, p. 465). In other words, actors adapt to the lack of nonverbal behavior inherent to CMC through textual and linguistic cues that, in time, are interpreted as social or personal information.

Further expansion of CMC theory can be seen in Fulk and colleague’s Social Influence (SI) model of technology use (Fulk, 1993; Fulk, Schmitz, & Ryu, 1995; Fulk, Schmitz, & Steinfeld, 1990; Schmitz & Fulk, 1991). According to the SI model, media characteristics play a role in media perceptions, but contextual social factors must also be recognized as influential in the development of media perceptions. The underlying premise of the SI model is that “[m]edia perceptions are, in part, *subjective and socially constructed*” [italics in original] (Fulk et al., 1990). Specifically, the attitudes, statements, and behaviors of others in close contact are considered key in shaping how one views and uses communication media. Several studies support the notion that perceptions and uses of communication technologies are influenced by the way social network members talk about and use media (Campbell, 2002; Fulk et al., 1990; Fulk et al., 1995; Fulk & Ryu, 1990; Fulk, Schmitz, & Steinfeld, 1988; Fulk, Schmitz, Ryu, & Steinfeld, 1989; Rice, Grant, Schmitz, & Torobin, 1988; Schmitz & Fulk, 1991; Shook, 1988).

Highlighting the importance of human agency during CMC, Russo and colleagues (Russo & Campbell, 1998; Russo & Campbell, 2001; Russo & Benson, 2002) have

advanced the concept of mediated presence to explain how salience and immediacy can be established in a computer-mediated setting in spite of a lack of nonverbal cues.

Mediated presence refers to a sense that others are “real,” “present,” or “immediate” during online interaction. Russo and Benson (2002) explain, “[w]hen we find ourselves attending to another online, that person has presence” (p. 6). Through investigations of how mediated presence is established in an online class, Russo and Campbell (1998, 2001) found communicative behaviors such as responsiveness, frequency of interaction, and message tone influenced perceptions of presence.

Theories of social information processing, social influence, and mediated presence provide frameworks for looking beyond media characteristics and draw attention to the social aspects that play a role in how meaning is constructed in a computer-mediated environment. For example, Russo and Campbell’s (2001) finding that message tone significantly affects perceptions of presence illustrates the fact that the style of one’s discourse plays an important role in the meaning created through CMC. The current study draws from this theoretical orientation in its attempt to assess perceptions of style and tone in message segments of email interactions.

#### *Communication Accommodation Theory*

Findings of the current study may offer benefits to future investigations of CMC interactions. As noted, one application of the findings is to aid studies of accommodation in a computer-mediated setting. Results of previous research in this area show that individuals accommodated to verbal markers in the body of a message and to greetings. In addition, messages containing both verbal and structural politeness indicators elicited

the most polite responses in email exchanges (Bunz & Campbell, 2002). This research helps explain how the use of language and message structure affect transactions that take place through email.

Communication accommodation theory (CAT) addresses behavioral adjustments individuals make during communication in order to express values, attitudes, and intentions. Specifically, CAT sets out “to clarify the motivations underlying, as well as the constraints operating upon, speech shifts during social interactions and the social consequences of these” (Giles, Mulac, Bradac, & Johnson, 1987, p. 14).

Two key concepts related to CAT are convergence and divergence. Convergence is the process of individuals adapting toward each other’s speech. When Giles (1973) first introduced accommodation theory, he illustrated convergence by reporting that individuals in interview situations adjusted their accents toward that of the interviewer. Divergence, on the other hand, refers to the way individuals adjust their speech away from each other in order to accentuate differences. Bourhis and Giles (1977) reported divergence in their study of the reactions of Welsh people to language questions asked of them by English-sounding speakers. When the English-sounding speakers threatened the ethnic identity of the Welsh by challenging the value of learning the Welsh language, the Welsh individuals diverged from the English by broadening their Welsh accents.

Features of convergence may include utterance length, speech rate, information density, vocal intensity, pausing frequencies and lengths, response latency, self-disclosure, jokes, expressing solidarity/opinions/orientations, gesture, head nodding, facial affect, and posture. While excessive convergence may be perceived as patronizing or inappropriate (Giles & Smith, 1979; Scotton, 1980), convergence is generally met with

positive evaluation. It follows that convergence may reflect an individual's desire for social approval (Giles et al., 1987). Giles et al. (1987) pointed to research demonstrating that similarity in speech rates, response latencies, language, and accent are perceived more favorably than dissimilarity in the realms of social attractiveness (Street, Brady, & Putnam, 1983), communication effectiveness (Giles & Smith, 1979), perceived warmth (Welkowitz & Kuc, 1973), and cooperativeness (Feldman, 1968).

Investigations of accommodation in email messages will help illuminate whether and how convergence takes place in a context where traditional notions of speech and nonverbal behavior are replaced with textual exchange. The current study lays the groundwork for further studies of accommodation by identifying fragments of discourse that can be categorized for analysis of message tone, so that researchers can determine if a particular tone is accommodated to in a particular message exchange via email.

## Methods

Based on the previous considerations, two research questions were developed for this research.

Research Question 1:

In computer-mediated communication, do subjects perceive message fragments the same way in a specific context established by the overall message?

Research Question 2:

In what way do demographics such as age, gender, and experience with email influence the evaluation process?

### *Participants*

The questionnaire was distributed in a large lecture class at a north-eastern research university. A total of 155 questionnaires were completed. Out of these, 63% of subjects were female. Most subjects were 20 years (48%) or 21 years (24.5%) old. Subjects indicated that they had been using email for four to six years (47%), six to nine years (37%), one to three years (12%), or more than nine years (4%). Thus, subjects can be assumed to have moderate to a lot of experience with email, especially compared to their age.

### *The Measurement Instrument*

The questionnaire included three demographic questions (gender, age, and experience using email) and three email messages (see Appendix A) created for the purpose of this study. Each email message was printed in full. Next to the full message, certain phrases taken from the message were printed again, followed by two blanks for an adjective and an intensity level. Subjects were asked to match each message fragment with one of the provided adjectives (affirming, appreciative, assertive, bold, caring, enthusiastic, formal, friendly, happy, personal, polite, respectful, strong, warm), and an intensity level on a 5-point Likert scale ranging from “very slightly” to “extremely.”

Studies investigating the reaction to messages or communication accommodation in personal messages have been conducted before (i.e., Buzzanell, Burrell, Stafford, & Berkowitz, 1996; Bunz & Campbell, 2002). Studies focusing on verbal messages (i.e., Bonnesen & Hummert, 2002; Hummert & Flora, 1999; Hummert & Mazloff, 2001;

Morgan & Hummert, 2000) in specific have made use of adjectives in various dimensions, such as warmth, respect, satisfaction, caring, polite, etc. (Ryan, Hamilton, & Kwong See, 1994; Ryan, Bourhis, & Knops, 1991; Watson, Clark, & Tellegen, 1988). These dimensions and scales have been used repeatedly and reported acceptable reliabilities (Harwood, Ryan, Giles, & Tysoski, 2000; Ryan, Meredith, & Shantz, 1994; Ryan, Kennaley, Pratt, & Shumovich, 2000). The adjectives used in this study (listed above) were loosely based on these dimensions.

For message 1, a message in a business/job application context, six fragments were evaluated. The message took place in a first-time interaction, new relationship context where considerable status differences were present. For message 2, a message in a friendship/student context, five fragments were evaluated. The second message took place in an existing relationship where both participants were of equal status. For message 3, a message in a family/holiday context, also five fragments had to be evaluated. The third message also took place in an existing relationship, but as it describes a parent/child interaction with the child no longer living at home, it takes place in a grey area where status may or may not have played a role, depending on a variety of relationship factors not known here. For each message, an “overall” evaluation was requested from the subjects.

## Results

For each unit of analysis (message fragment), a chi-square analysis was conducted to investigate whether the categories (matching with a certain adjective) showed the hypothesized equal frequencies or not. In addition, follow-up chi-square analyses were

conducted to assess the differences between the category chosen most often and second often by subjects. Results are reported for each category separately.

*Context: Business/First Interaction/Status Differences*

The first message was written in a business/job application context between a manager and a job applicant. The manager asked the applicant to call the office and make an appointment for an interview. Overall, initial chi-squares were significant and showed unequal proportions,  $\chi^2(11, N = 145) = 300.32, p = .000$ , effect size = .19. Follow-up chi-square analysis showed that significantly more people considered the entire message to be “formal” ( $n = 66$ ) than “polite” ( $n = 24$ ),  $\chi^2(1, N = 90) = 19.6, p = .000$ . Intensity frequencies indicated a moderate (42%) to high (“quite a bit,” 38%) level. Thus, overall the first message as a whole was perceived to be moderately to highly formal.

The first message fragment was the greeting “Dear Mr. Mahony.” The results of the initial chi-square analysis were significant,  $\chi^2(5, N = 153) = 289, p = .000$ , effect size = .38. Frequencies indicated that most subjects considered this message fragment to be “formal” ( $n = 102$ ). Follow-up chi-square analysis indicated that the proportion of subjects who considered “Dear Mr. Mahony” to be formal did differ significantly from those who considered it “polite” ( $n = 22$ ),  $\chi^2(1, N = 124) = 51.61, p = .000$ . Frequencies of the intensity measure indicated a moderate (39%) to high (“quite a bit,” 35%) level. Overall, this suggests that a greeting of “Dear [recipient last name]” in the context of communication between virtual strangers is considered to be moderately to highly formal.

The second message fragment was the phrase “Thank you for your interest in our organization.” Initial chi-squares were significant,  $\chi^2(10, N = 153) = 323.45, p = .000$ ,

effect size = .21. A follow-up analysis indicated that the proportion of subjects considering this statement “polite” (n = 59) or “appreciative” (n = 52) were not significantly different,  $\chi^2(1, N = 111) = .441, p = .506$ . Thus, it cannot be concluded whether “Thank you [*cause*]” in this context is polite or something else.

The third message fragment, “We were impressed,” provided positive feedback. Chi-squares showed that the proportions were not equal,  $\chi^2(13, N = 152) = 168.53, p = .000$ , effect size = .085. Also, follow-up chi-squares showed that not significantly more people considered this fragment to be “enthusiastic” (n = 43) than “affirming” (n = 27),  $\chi^2(1, N = 70) = 3.66, p = .056$ , though results approached significance. Thus, results do not show conclusively whether being admitting to being “impressed” by a person indicates enthusiasm or affirmation.

The fourth message fragment was the brief grammatical statement of “would like to,” as opposed, for example, to “want to.” Initial chi-squares showed significant results,  $\chi^2(14, N = 153) = 135.72, p = .000$ , effect size = .06. Follow-up chi-squares approached significance closely,  $\chi^2(1, N = 59) = 3.81, p = .051$ , indicating but not showing conclusively that “would like to” can be considered “polite” (n = 37), rather than “assertive” (n = 22). Future research should investigate the different perceptions of statements such as “would” or “could” compared to “want” or “can.”

The fifth message fragment was the last complete sentence, “We look forward to meeting you in person.” The results of the initial chi-square analyses were significant,  $\chi^2(12, N 153) = 136.99, p = .000$ , effect size = .075. Follow-up chi-square analyses were not significant,  $\chi^2(1, N = 69) = .014, p = .904$ , as an almost identical number of subjects perceived this fragment to be “friendly” (n = 35) as did “enthusiastic” (n = 34). These

results lead to the conclusion that for such a fragment, the content of the message is important, but the personality of the reader is even more so.

Finally, the sixth and last message fragment of the first message was the sign-off “Sincerely.” Initial chi-squares were significant,  $\chi^2(8, N = 153) = 292, p = .000$ , effect size = .02. Follow-up chi-square analyses showed significant results between subjects who considered this fragment to be “formal” ( $n = 79$ ) rather than “polite” ( $n = 29$ ),  $\chi^2(1, N = 108) = 23.15, p = .000$ . Intensity measures indicated a moderate (30%) to high (“quite a bit,” 29%) level. Thus, in the context of an overall formally perceived message, the sign-off “sincerely” is considered moderately to highly formal.

*Context: Friendship/Established Relationship/No Status Difference*

The second message of the study was situated in a friendship/student context. The message was written in all lower case letters and included slang and cyberslang. One friend asked another to bring a textbook left in the second person’s car. The message writer also expressed that he/she is ready for the semester to end. Overall, initial chi-squares were significant and showed unequal proportions,  $\chi^2(11, N = 150) = 515.92, p = .000$ , effect size = .31. Follow-up chi-square analysis did not show that significantly more people considered the entire message to be “friendly” ( $n = 73$ ) compared to “personal” ( $n = 54$ ),  $\chi^2(1, N = 127) = 2.84, p = .092$ . Thus, overall the second message as a whole was perceived to be both friendly and personal.

The first message fragment of the second message was the greeting “hey.” Initial chi-squares were significant,  $\chi^2(10, N = 153) = 473.14, p = .000$ , effect size = .31. Follow-up chi-square results indicated that more people considered this greeting to be

“friendly” (n = 82) than “personal” (n= 43),  $\chi^2 (1, N = 125) = 12.17, p = .000$ . Intensity levels for “friendly” were moderate (35%). Thus, in the context of an established relationship among students, the greeting “hey” is considered to be moderately friendly.

The second message fragment was a simple request, “can you bring it.” The results of the initial chi-square analysis were significant,  $\chi^2 (11, N = 155) = 170.08, p = .000$ , effect size = .10, but follow-up chi-squares were not,  $\chi^2 (1, N = 76) = 3.37, p = .066$ . These results show that in the friendship context, subjects did not consider the fragment “can you bring it” to be more “assertive” (n = 46) than “polite” (n = 30), but possibly a mix of both or something else altogether.

The third message fragment chosen was an emoticon, the sad smiley face “☹”. Initial chi-square results were significant,  $\chi^2 (11, N = 155) = 288.69, p = .000$ , effect size = .17. Follow-up analysis showed subjects considered the smiley face to be “personal” (n = 60) rather than “friendly” (n = 39) or something else,  $\chi^2 (1, N = 99) = 4.45, p = .035$ . The intensity level ratings were moderate (30%) or high (“quite a bit,” 37%). Thus, in the friendship, equal status context, a smiley face is considered moderately to highly personal.

The fourth message fragment was the sentence, “I’m sooo ready to have this class over with!” Though initial chi-square analysis were significant,  $\chi^2 (9, N = 154) = 95.35, p = .000$ , effect size = .07, follow up chi-squares comparing between a perception of “enthusiastic” (n = 39) and “personal” (n= 31) were not,  $\chi^2 (1, N = 70) = .914, p = .339$ . Though by assumption, this statement is well known to students, results do not indicate a general consensus about its interpretation. Whether this difference of perception is due to

the mediated context in which the interpreted messages of the study stood, or other factors remains to be investigated.

The fifth and last message fragment of the second message to be evaluated was the cyberslang expression “cul8r dude.” “Cul8r,” to be read as “see you later,” is a typical example of online forms of written slang, here called cyberslang. Other examples include “lol” for “laughing out loud.” Initial chi-square analyses were significant,  $\chi^2(9, N = 155) = 418.23, p = .000$ , effect size = .30. Follow-up chi-square analyses showed no significant results for perceptions of “friendly” ( $n = 75$ ) or “personal” ( $n = 56$ ). A sample consisting of subjects other than students may have resulted in different conclusions for this and possibly some of the other message fragments of the second message.

*Context: Family/Established Relationship/Fluctuating Status Difference*

The third message of the study was situated in the family/holiday context. A mother wrote her child, no longer living at home, a message about the upcoming Thanksgiving holiday and the child’s visit home. The message also contained family chit-chat. Overall, initial chi-squares showed significant results,  $\chi^2(10, N = 151) = 251.05, p = .000$ , effect size = .17. Follow-up chi-square analysis investigated whether the overall message was “warm” ( $n = 52$ ) or “caring” ( $n = 45$ ). Follow-up results were not significant,  $\chi^2(1, N = 97) = .505, p = .477$ , meaning that perceptions of this message overall were not unanimous.

The first message fragment of the third message was the greeting “Hi honey!” Initial chi-square analysis was significant,  $\chi^2(9, N = 153) = 124.58, p = .000$ , effect size = .09. However, other than the previous two greetings (“Dear [recipient last name],”

“hey”), results of the follow-up chi-square analyses were not significant,  $\chi^2 (1, N = 76) = .211, p = .646$ , indicating no significant difference between the perceptions of this greeting as “warm” (n = 40) or “personal” (n = 36).

The second message fragment was the amended expression “Who says you can’t teach an old lady any new tricks?” Results of the initial chi-square analysis were significant,  $\chi^2 (12, N = 154) = 129.29, p = .000$ , effect size = .07. Results of the follow-up analyses were not significant,  $\chi^2 (1, N = 63) = .016, p = .900$ , as could be expected due to an almost equal amount of subjects perceiving this message to be either “friendly” (n = 32) or “happy” (n = 31).

The third message fragment expressed joy over a specific event, “I’m so happy you are coming home.” The initial chi-square results were significant,  $\chi^2 (11, N = 155) = 268.72, p = .000$ , effect size = .16. Equally, follow-up chi-square analyses were significant,  $\chi^2 (1, N = 85) = 9.89, p = .002$ . Results indicated that subjects perceived this fragment to be “happy” (n = 57) rather than “warm” (n = 28) or “caring” (n = 28). The intensity level was perceived as high (37.5%) to very high (39%). Thus, in the context of family communication, expressing joy over a specific event or reason is considered highly or very highly happy.

The fourth message fragment was also of emotional content, stating, “We really miss you.” Results of the initial chi-square were significant,  $\chi^2 (12, N = 155) = 441.41, p = .000$ , effect size = .24. As with the previous message fragment, results of the follow-up chi-square analyses were significant,  $\chi^2 (1, N = 111) = 6.57, p = .010$ . Subjects indicated they considered this statement “caring” (n = 69) rather than “warm” (n = 42) or anything

else. Intensity levels were very high (50%). Thus, a mother stating that she misses her child is perceived as very highly caring.

Finally, the fifth and last message fragment was a request, asking, “could you let me know.” Initial chi-square analyses were significant,  $\chi^2 (13, N = 155) = 119.31, p = .000$ , effect size = .06. Subjects considered this a “polite” (n = 40) rather than an “assertive” (n = 21) request,  $\chi^2 (1, N = 61) = 5.92, p = .015$ . Frequencies of intensity levels indicated a moderate (42.5%) to high (32.5%) level. Thus, a request in a parent/child communication interaction was perceived to be of moderate to high politeness. It would be interesting to see whether these last conclusions would be reached with a non-student sample (specifically: a parent sample) too.

Overall, eight significant results were found, as is summarized in Table 1.

Table 1

*Perceptions of message fragments*

| Message | Fragment                          | Intensity         | M    | SD   | Perception |
|---------|-----------------------------------|-------------------|------|------|------------|
| 1       | <i>Overall message</i>            | Moderate to high  | 3.42 | .88  | Formal     |
| 1       | <i>Dear [recipient last name]</i> | Moderate to high  | 3.29 | 1.00 | Formal     |
| 1       | Sincerely                         | Moderate to high  | 3.41 | 1.19 | Formal     |
| 2       | hey                               | Moderate          | 3.13 | 1.11 | Friendly   |
| 2       | ☹                                 | Moderate to high  | 3.43 | 1.06 | Personal   |
| 3       | I’m so happy <i>[reason]</i>      | High to very high | 4.07 | .97  | Happy      |
| 3       | We really miss you                | Very high         | 4.18 | 1.04 | Caring     |
| 3       | could you let me know             | Moderate to high  | 3.33 | .97  | Polite     |

The first message, taking place in a business/first interaction/status difference context, was overall perceived to be formal, and both the greeting (dear [*recipient last name*]) and the sign-off (sincerely) were perceived to be formal too. In the second message, taking place in a friendship/established relationship/no status difference context, the greeting (hey) was perceived to be friendly, and the use of a smiley face (☺) was perceived to be personal. In the third message, taking place in a family/established relationship/fluctuating status difference context, expressing joy over a particular event or reason (I'm so happy [*reason*]) was considered to be a sign of happiness, expressing longing (we really miss you) was perceived as caring, and a request (could you let me know) was perceived to be polite.

#### *Additional Statistics*

To investigate whether a statistical relationship exists between gender and the message fragments that had proved significance in the above reported analyses, a two-way contingency table analysis using crosstabs was conducted. Three significant relationships were found. Gender and the evaluation of “Sincerely” were significantly related, Pearson  $\chi^2(8, N = 153) = 16.41, p = .037$ , Cramér's  $V = .33$ . Follow-up t-tests, however, did not indicate a significant difference between women's ( $M = 8.60, SD = 2.58$ ) and men's ( $M = 8.84, SD = 2.58$ ) interpretations,  $t(118) = -.552, p = .582$ .

Also, gender and the evaluation of “I'm so happy [*reason*]” were significantly related, Pearson  $\chi^2(11, N = 155) = 24.28, p = .012$ , Cramér's  $V = .40$ . Independent sample t-test analysis revealed that men rated “I'm so happy [*reason*]” significantly more

“happy” ( $M = 10$ ,  $SD = 3.15$ ) than did women ( $M = 7.83$ ,  $SD = 2.99$ ),  $t(112) = -4.22$ ,  $p = .000$ .

Finally, gender and the evaluation of “We really miss you” were significantly related, Pearson  $\chi^2(12, N = 155) = 26.52$ ,  $p = .009$ . Pairwise comparisons revealed that counter to what one might expect based on cultural stereotypes, it was the men who interpreted “We really miss you” as significantly more “caring” ( $M = 9.84$ ,  $SD = 3.98$ ) than did women ( $M = 7.55$ ,  $SD = 3.88$ ),  $t(115) = -3.48$ ,  $p = .001$ .

To investigate the relationship between age and the message fragments, and experience with email and the message fragments, crosstabs were used in connection with the eta statistic. No significant results emerged in connection with the experience variable. Three significant results were found for age and the message fragments. First, age and the evaluation of “Dear [*recipient last name*]” were significant related, Pearson  $\chi^2(85, N = 153) = 107.79$ ,  $p = .048$ . Differences of age accounted for almost 9% (eta = .293) of the variance of message interpretation. Second, age and the evaluation of “☺” were significantly related, Pearson  $\chi^2(187, N = 155) = 285.03$ ,  $p = .000$ . Almost 13% (eta = .355) of the variance of message interpretation was explained by age differences. Finally, age and the evaluation of “could you let me know” were significantly related, Pearson  $\chi^2(221, N = 155) = 302.84$ ,  $p = .000$ . Only 6% of the variance of message interpretation was due to differences in age. The next section interprets the reported results and puts them into a theoretical context.

## Discussion

The purpose of this study was to assess perceptions of message fragments in three contexts, job application/first interaction, friendship/established relationship, and family/changing relationship. Several of the message fragments investigated are typical for various genres of written interactions, such as letters, memos, or notes. Discovering the meaning these fragments have in the content contexts and relationship contexts chosen presents a further step in discourse analysis, helping us to understand written communication in the computer-mediated communication environment.

To investigate message fragment perception, 155 students (63% female) enrolled in a large lecture class at a north-eastern research university completed the questionnaire. The questionnaire consisted of three messages. For each message, five (message 2 and 3) or six (message 1) fragments had to be evaluated by matching each fragment with one of fourteen provided adjectives. Subjects were also asked to give an intensity measure (Likert scale, 1 to 5) for each evaluation. The majority of subjects was 20 years old (48%) and had been using email for four to six years (47%).

Research question 1 asked, “In computer-mediated communication, do subjects perceive message fragments the same way in a specific context established by the overall message?” Chi-square analysis showed a total of 8 significant evaluations. The first message was written in a business context and showed a first interaction between a manager and a potential interviewee, implying status differences. Results showed that overall, this message was perceived to be moderately to highly formal. The message fragment “Dear *[recipient last name]*” was perceived to be moderately to highly formal. Finally, the closing remark “Sincerely” was perceived to be moderately to highly formal.

More research is needed to evaluate these fragments in a different context, for example in a continuous business relationship, or a more informal setting. However, these results show that the two fragments can be used when the message writer wants to establish the feeling of formality through his/her writing.

The second message was written from one student to another. The two students were in a continuous friendship relationship where both were of equal status. Results showed that in this context, the greeting “hey” was perceived to be moderately friendly. Also, the sad smiley face “☹” was perceived to be moderately to highly personal. As before, these fragments might be evaluated differently when used in a different context, such as the business context. Obviously, the message context plays an important role in the evaluation of the fragments, though this assumption has not been proved by research.

Finally, the third message was written from a mother to her child. The existing relationship was established, but status differences were in a changing state as the child apparently does not live at home anymore and is thus, grown up. In this context, the statement “I’m so happy [*reason*]” was perceived to be expressing joy (happiness) highly or very highly. The emotionally revealing statement “We really miss you” was perceived to be very highly caring. The request “could you let me know” was perceived to be moderately to highly polite.

In conclusion to research question 1, results show that indeed, certain fragments are perceived similarly in certain contexts. Future research should investigate whether the same fragments are perceived similarly or differently in other content or relationship contexts. Also, research should establish whether recipients of such messages and message fragments accommodate their own answer to include similar formal, friendly,

etc. fragments. Finally, research should investigate whether the medium itself influences message fragment interpretation, as it is possible that a phone message, and email message, an instant message, or a short text message are interpreted differently.

Research question 2, “In what way do demographics such as age, gender, and experience with email influence the evaluation process?” Crosstabs showed that gender had an influence on the evaluation of “sincerely,” though follow-up t-tests did not conclusively show the direction of this relationship. Results also showed that men rated “I’m so happy [*reason*]” as expressing joy more clearly than did women. Similarly, men thought that “We really miss you” was more caring than women did. These results might be counter-stereotypically. Stereotypically, women are said to be more emotional. They could be expected to feel stronger emotions. Future research should investigate whether men also accommodate perceived emotion more than do women. It is possible that the stereotype developed because of interpretations of what men say/write, rather than how they perceive others’ messages.

Results showed that experience with email had no significant influence on the interpretation of any of the message fragments. Age influenced the process for the three of the message fragments. Nine percent of the variance of the evaluation of “Dear [*recipient last name*]” were explained by age. Similarly, 13% of the variance of the evaluation of “☺” were explained by age, and 6% of the variance of “could you let me know” were explained by age. As only 10% (n = 15) of participants were older than 23 years (minimum age to participate was 18), no further analysis were conducted. Future research should definitely look at the influence age has on message fragment interpretation. It can be hypothesized that cyberslang (such as “cul8r”) or emoticons

(such as “☺”) are used more by younger people, in more informal context, and in less traditional media such as instant messenger.

In conclusion, results showed that basic demographics, indeed, did influence the perception of discursive fragments. However, more research is needed to establish these influences on a more sound basis. Future research should concentrate on four main areas: a) investigate the same discursive fragments in different contexts; b) investigate whether email users accommodate to these fragments by using the same or similar expressions of, i.e., formality, caring, etc.; c) investigate whether interpretation of message fragments differs across different computer-mediated media; d) investigate the influences of age, gender, ethnicity, experience, and other demographic factors across the previous three areas of interest.

Results from the present study add to our understanding of email as a mediated communication medium. Results help establish email as a genre along the lines laid out by Yates and Orlikowski (1992), and support the importance of context & Yoshioka et al., (2001). Results also add to previous research on gender differences and emotional expressions in online interactions (Herring, 1992, 1996). Finally, results can be explained through various lenses of computer-mediated communication theories.

Last but not least, results provide an answer to the proverb, “What’s in a word?” In the case of email messages, a word can make a large difference. The mood of a message or a sentence can be created easily. Politeness (Bunz & Campbell, 2002) can be established simply by including words such as “thank you” in the message body. Other tones such as formality, friendliness, caring, or joy can be expressed through a few short words used appropriately, depending on the context of the message and the relationship.

Though some of the results of this study don't differ much from offline norms (i.e., formality in a business context when interactants don't know each other), they present one of the first steps to actually investigating these norms in the mediated environment. We cannot take for granted that our offline norms apply online. So, if nothing else, results from this research should make us think twice about how we use email for our own online interactions and impression management.

## References

- Adkins, M., & Brashers, D.E. (1995). The power of language in computer-mediated groups. *Management Communication Quarterly*, 8(3), 289-323.
- Bonnesen, J. L., & Hummert, M. L. (2002). Painful self-disclosures of older adults in relation to aging stereotypes and perceived motivations. *Journal of Language and Social Psychology*, 21 (3), 275-301.
- Bourhis, R.Y., & Giles, H. (1977). The language of intergroup distinctiveness. In H. Giles (Ed.), *Language, Ethnicity, and Intergroup Relations*, (pp. 119-135). London: Academic Press.
- Bunz, U., & Campbell, S.W. (2002, October). Politeness accommodation in electronic mail, Or: Up to what is Dr. Aitken? Presented at the 3<sup>rd</sup> Annual Conference of the Association of Internet Researchers, Maastricht, The Netherlands.
- Buzzanell, P, Burrell, N., Stafford, S., & Berkowitz, S. (1996). When I call you up and you're not there: Application of communication accommodation theory to telephone answering machine messages. *Western Journal of Communication*, 60, p. 310-336.
- Campbell, S.W. (2002). *The social construction of mobile telephony: An application of the social influence model to perceptions and uses of mobile phones within personal communication networks*. Unpublished doctoral dissertation, University of Kansas, Lawrence.
- Campbell, K.K., & Jamieson, J.H. (1978). Form and genre in rhetorical criticism: An introduction. In K.K. Campbell & K.H. Jamieson (Eds.), *Form and genre: Shaping rhetorical action* (pp. 9-32). Falls Church, VA: Speech Communication Association.

Culnan, M.J., & Markus, M.L. (1987). Information technologies. In F.M. Jablin, L.L. Putnam, K.H. Roberts, & L.W. Porter (Eds.), *Handbook of organizational communication* (pp. 420-444). Newbury Park, CA: Sage.

Feldman, R. (1968). Response to compatriots and foreigners who seek assistance. *Journal of Personality and Social Psychology*, *10*, 202-214.

Foulger, D.A. (1990). Medium as process: The structure, use, and practice of computer conferencing on IBM's IBMPC computer conferencing facility. Unpublished doctoral dissertation, Temple University, Philadelphia.

Fulk, J. (1993). Social construction of communication technology. *Academy of Management Journal*, *36*, 921-950.

Fulk, J., & Ryu, D. (1990). *Perceiving electronic mail systems: A partial test of the Social Information Processing Model of communication media use in organizations*. Paper presented to the International Communication Association, Dublin, Ireland.

Fulk, J., Schmitz, J., & Ryu, D. (1995). Cognitive elements in the social construction of technology. *Management Communication Quarterly*, *8*, 259-288.

Fulk, J., Schmitz, J., Ryu, D., & Steinfeld, C.W. (1989). *Communication in R&D via electronic mail III: Final report*. University of Southern California, Annenberg School of Communications.

Fulk, J., Schmitz, J., & Steinfeld, C.W. (1988). *Social information and technology use in organizations*. Paper presented at the annual Academy of Management convention, Anaheim, CA.

Fulk, J., Schmitz, J., & Steinfeld, C.W. (1990). A social influence model of technology use. In J. Fulk & C. Steinfeld (Eds.), *Organizations and communication technology* (pp. 117-139). Newbury Park, CA: Sage.

Giles, H. (1973). Accent mobility: A model and some data. *Anthropological Linguistics*, 15, 87-105.

Giles, H., Mulac, A., Bradac, J., & Johnson, P. (1987). Speech accommodation theory: The first decade and beyond. In M.L. McLaughlin (Ed.), *Communication yearbook 10* (pp. 13-48). Beverly Hills, CA: Sage.

Giles, H., & Smith, P.M. (1979). Accommodation theory: Optimal levels of convergence. In H. Giles and R. St. Clair (Eds.), *Language and Social Psychology*, (pp. 45-65). Oxford: Blackwell.

Harwood, J., Ryan, E. B., Giles, H., & Tysoski, S. (1997). Evaluations of patronizing speech and three response styles in a non-service-providing context. *Journal of Applied Communication Research*, 25, 170-195.

Hiemstra, G. (1982). Teleconferencing, concern for face, and organizational culture. In M. Burgoon (Ed.), *Communication yearbook 6* (pp. 874-904). Beverly Hills, CA: Sage.

Herring, S.C. (1992). Gender and participation in a computer-mediated linguistic discourse. Washington, D.C.: ERIC Clearinghouse on Languages and Linguistics. Document no. ED345552.

Herring, S.C. (1996). Posting in a different voice: Gender and ethics in computer-mediated communication. In C. Ess (Ed.), *Philosophical perspectives on computer-mediated communication* (pp. 115-145). Albany, NY: SUNY Press.

Hiltz, R.S., Johnson, K., & Turoff, M. (1986). Experiments in group decision making: Communication process and outcome in face-to-face versus computerized conferences. *Human Communication Research*, 13(2), 225-252.

Hummert, M. L., & Flora, J. (1999, July). *Responses to patronizing talk: Perceptions of college students and nursing home staff*. Presented at the 4<sup>th</sup> International Conference on Communication, Ageing, and Health. Gold Coast, Queensland, Australia.

Jacobs, S. (1994). Language and interpersonal communication. In M.L. Knapp & G.R. Miller (Eds.) *Handbook of interpersonal communication* (pp. 199-228). Thousand Oaks, CA: Sage.

Johansen, R., DeGrasse, R., & Wilson, T. (1978). *Group communication through computers: Vol. 6. Effects on working patterns*. Menlo Park, CA: Institute for the Future.

Lea, M., & Spears, R. (1991). Computer-mediated communication, deindividuation and group decision-making. *International Journal of Man-Machine Studies, Special Issue on CSCW and Groupware*, 39, 283-301.

Miller, C.R. (1984). Genre as social action. *Quarterly Journal of Speech*, 70, 151-167.

Rice, R.E. (1984). Mediated group communication. In R.E. Rice & Associates (Eds.), *The new media: Communication, research, and technology* (pp. 129-154). Beverly Hills, CA: Sage.

Rice, R.E., Grant, A., Schmitz, J., & Torobin, J. (1988). *A network approach to predicting the adoption and outcomes of electronic messaging*. Paper presented at the Annual Academy of Management Convention, Anaheim, CA.

Rice, R.E., & Love, G. (1987). Electronic emotion. *Communication Research*, 14, 85-108.

Russo, T.C., & Benson, S. (2002). Learning with invisible others: Perceptions of online presence and their relationship to cognitive and affective learning. Unpublished manuscript.

Russo, T.C., & Campbell, S.W. (1998, November). *An online graduate class in communication technology: Outcomes and lessons learned*. Paper presented at the annual meeting of the National Communication Association, New York, NY.

Russo, T.C., & Campbell, S.W. (2001, November). *Perceptions of mediated presence in an asynchronous online course: Interplay of communication behaviors and medium*. Paper presented at the annual meeting of the National Communication Association, Atlanta, GA.

Ryan, E. B., Bourhis, R. Y., & Knops, U. (1991). Evaluative perceptions of patronizing speech addressed to elders. *Psychology and Aging*, 6, 442-450.

Ryan, E. B., Hamilton, J. M., & Kwong See, S. (1994). Patronizing the old: How do younger and older adults respond to baby talk in the nursing home? *International Journal of Aging and Human Development*, 39, 21-32.

Ryan, E. B., Kennaley, D. E., Pratt, M. W., & Shumovich, M. A. (2000). Evaluations by staff, residents, and community seniors of patronizing speech in the nursing home: Impact of passive, assertive or humorous responses. *Psychology and Aging*, 15, 272-285.

Ryan, E. B., Meredith, S. D., & Shantz, G. B. (1994). Evaluative perceptions of patronizing speech addressed to institutionalized elders in contrasting conversational contexts. *Canadian Journal on Aging, 13*, 236-248.

Schmitz, J., & Fulk, J. (1991). Organizational colleagues, media richness, and electronic mail: A test of the social influence model of technology use. *Communication Research, 18*, 487-523.

Scotton, C. (1980). Explaining linguistic choices as identity negotiations. In H. Giles, W.P. Robinson, & P.M. Smith (eds.), *Language: Social Psychological Perspectives*. Oxford: Pergamon.

Shook, D.E. (1988). *A structural equivalence and contingency theory perspective on media usage and communication performance: The case of voice messaging*. Unpublished doctoral dissertation, University of Southern California, Los Angeles.

Short, J., Williams, E., & Christy, B. (1976). *The social psychology of telecommunications*. London: John Wiley.

Sproull, L., & Kiesler, S. (1986). Reducing social context cues: Electronic mail in organizational communication. *Management Science, 32*, 1492-1512.

Steinfeld, C. (1986). The social dimensions of computer mediated communications. In M. McLaughlin (Ed.), *Communication yearbook 9* (pp. 777-804). Newbury Park: Sage.

Street, R., Jr., Brady, R., & Putnam, W. (1983). The influence of speech rate stereotypes and rate similarity on listener's evaluations of speakers. *Journal of Language and Social Psychology, 2*, 37-56.

Trevino, L.K., Lengel, R.H., & Daft, R.L. (1987). Media symbolism, media richness, and media choice in organizations. *Communication Research*, *14*(5), 553-574.

Walther, J.B. (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research*, *19*, 52-90.

Walther, J.B., Anderson, J.F., & Park, D.W. (1994). Interpersonal effects in computer-mediated interaction: A meta-analysis of social and antisocial communication. *Communication Research*, *21*(4), 460-488.

Watson, D., Clark, L., & Tellegen A. (1988). Development and validation of brief measures of Positive and Negative Affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063-1070.

Welkowitz, J., & Kuc, M. (1973). Inter-relationships among warmth, genuineness, empathy and temporal speech patterns in interpersonal attraction. *Journal of Consulting and Clinical Psychology*, *41*, 472-473.

Yates, J., & Orlikowski, W.J. (1992). Genres of organizational communication: A structural approach to studying communication and media. *Academy of Management Review*, *17*(2), 299-326.

Yoshioka, T., Herman, G., Yates, J., & Orlikowski, W.J. (2001). Genre taxonomy: A knowledge repository of communicative actions. *ACM Transactions on Information Systems*, *19*(4), 431-456.